(3) Intermediate bulkhead insulation to minimize heat transfer between the LH_2 and the LO_2 tanks

(4) Aft bulkhead radiation shield to insulate the liquid oxygen tank from the thermal environment on the ground, and to minimize LO_2 tank heat absorption by radiation.

c. Nose Fairing: A nose fairing to protect the payload and electric/electronic equipment from the environment prior to launch and from aerodynamic loads and heating during ascent through the earth's atmosphere.

d. Interstage Adapter: An interstage adapter to support the Centaur vehicle and provide a physical connection between the Atlas and Centaur.

e. Payload Adapter: A payload adapter to support the payload and distribute the loads imposed by the payload to the Centaur payload adapter ring.

f. Bolt-on body structures.

3.2.3 SYSTEM DESCRIPTION. A system description of the tank structure, tank insulation, nose fairing, interstage adapter, payload adapter, and bolt-on-structure is contained in the following paragraphs.

3.2.3.1 Tank Structure. The tank structure consists of a thin-wall, 301 stainless steel, monocoque cylindrical section, pressure-stabilized to provide structural integrity. The tank assembly is capped on either end by stainless steel bulkheads of essentially elliptical cross-section. A double walled, insulated, ellipsoidal inner bulkhead provides separation between the liquid oxygen (aft) tank and liquid hydrogen (forward) tank. Figure 3-9 shows the Centaur tank arrangement. Figure 3-10 illustrates an intermediate bulkhead sectional view.

Welded tank brackets support the various systems fastened to the external/internal tank skin. Flanged tank weldments are provided to facilitate loading of propellants. Steel rings near the forward and aft ends of the cylindrical section of the tank support and provide a mating surface for the nose fairing and interstage adapter, respectively. The nominal volumes in cubic feet of the propellant tanks are as follows:

a. Liquid Hydrogen (forward tank) is 1267.9 ft^3

b. Liquid Oxygen (aft tank) is 377.5 ft^3

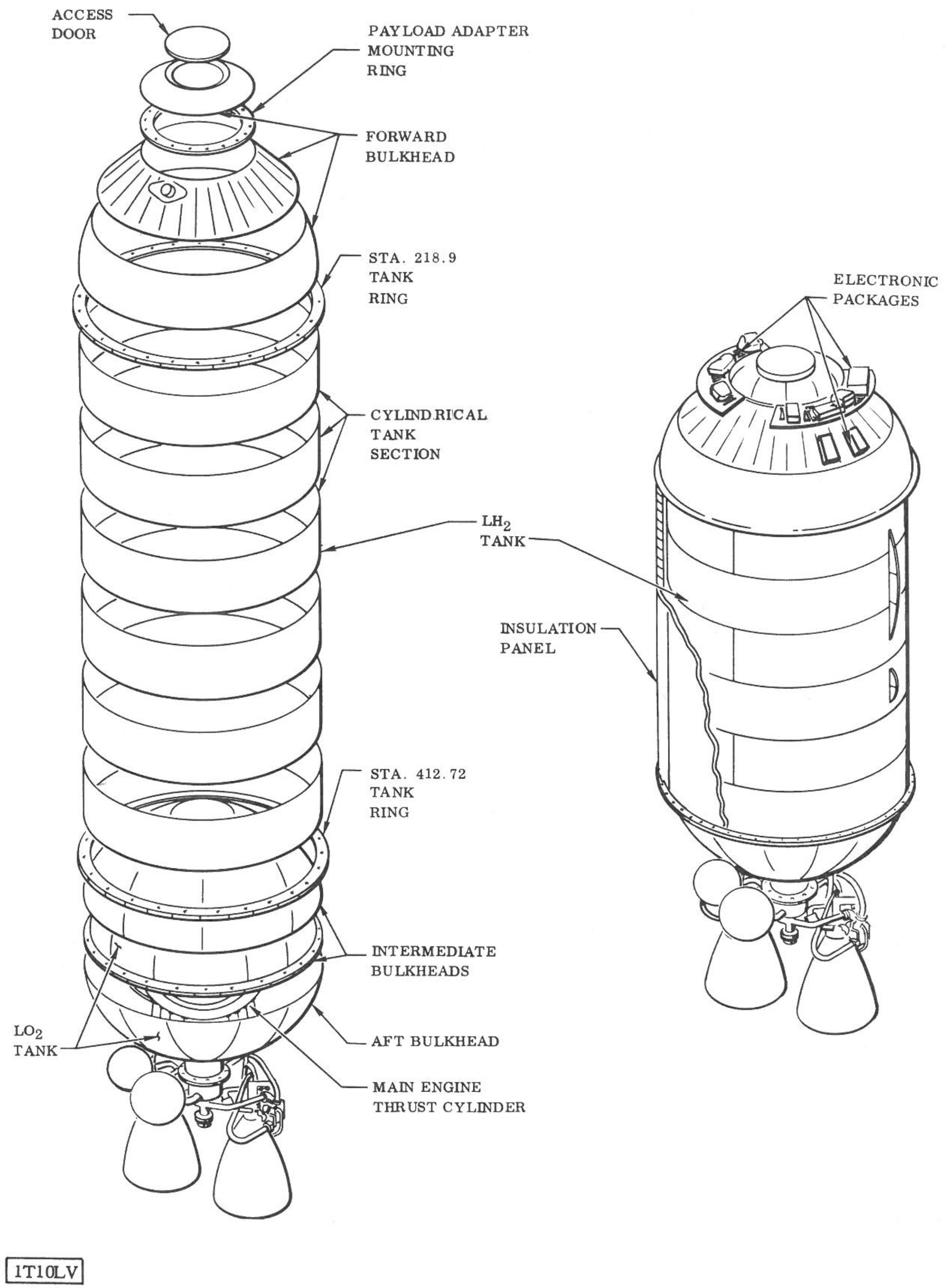

Figure 3-9. Centaur Tank Arrangement